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DRAFT CONTRIBUTION SE-14 -36

20 February 1953
NED/SI

A. Atomic Weapons

1. General

The Soviet atomic energy program has enjoyed, and almost certainly during the period of this estimate will continue to enjoy one of the highest priorities in the Soviet allocation of resources. The objective of the program continues to be on weapon development and the achievement of a rate of atomic weapon production and flexibility which will place the USSR in the best possible power position vis-a-vis the US. The Soviets have made substantial progress toward this objective. By mid-1952 they had established a substantial plutonium production capacity. They have achieved the production of weapon grade uranium-235. The development of new sites indicates that their atomic energy program is continuing to expand; a major increase in plutonium production probably became effective during the latter part of 1952. Uranium reserves in the USSR are sufficient to support a large program, however, the rate of exploitation of these reserves will depend on the balance decided upon between atomic energy and other Soviet activities. In fission weapons the Soviets have reached the point in technology at which the weapons stockpiled can be dictated by military requirements rather than by technical limitations.

2. Atomic Weapons Stockpiles

While estimates of Soviet plutonium production during the period up to mid-1955 are considered reasonably firm, a relatively large

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uncertainty exists with respect to installed or planned uranium-235 production capacity. Furthermore, other than some evidence of the composition and efficiencies of the various bombs tested by the Soviets, there is no specific information concerning the characteristics of weapons presently stockpiled or likely to be stockpiled. In converting fissionable material stockpiles to weapon stockpiles it has been assumed that both composite (i.e., containing U-235 and plutonium) and all-plutonium weapons will be fabricated. On this basis, the estimate of the cumulative Soviet atomic weapon stockpile for the period mid-1952 through mid-1955 is as follows:

Date	Number of Bombs (30-100 KT)
Mid-1952	60
Mid-1953	120
Mid-1954	200
Mid-1955	300

3. Variations and Uncertainty in Stockpile Estimate

The Soviet weapon stockpile for mid-1952 may be as low as one third less or as high as one third more than the figure stated. In view of the uncertainty in the production of fissionable material, the stockpile for future dates may be as low as one third less than or as high as twice the figure given. It should be noted that by changing weapon components it is possible to increase or decrease the number of weapons in the stockpile substantially. Such changes would, however, alter the kilotonnage yield according to the quantities

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of fissionable material used in the individual weapons. It is estimated that the USSR is probably capable of producing fission weapons yielding 200-500 kilotons but in so doing would reduce the number of weapons in their stockpile. On the other hand, they could also make smaller weapons than those used in calculating the stockpile estimates given above.